

CLAIMS

1. A difference profile for the detection of a disease in a mammal, comprising a plurality of spectral line positions and optionally corresponding signal intensities of NMR spectral lines, which express the normalized difference between one or more NMR spectra of metabolites in a
5 body fluid of one or more healthy individuals of said mammal, and one or more corresponding NMR spectra of metabolites in a corresponding body fluid of one or more individuals of said mammal in which said disease has been diagnosed.
2. A difference profile according to claim 1, wherein said mammal has
10 been chosen from the group consisting of primates, dogs and rodents.
3. A difference profile according to claim 1 or 2, wherein said body fluid is urine.
4. A difference profile according to any one of the preceding claims, wherein said disease is an immunological disease, a (chronic) inflammatory
15 disease, a degenerative disease, cancer, an infectious disease and/or a systemic disease.
5. A difference profile according to any one of claims 1-3, wherein said disease is osteoarthritis.
6. A difference profile according to claim 5, comprising the spectral lines
20 and values corresponding thereto according to Table 1.
7. A database comprising one or more difference profiles according to any one of claims 1-6.
8. A database according to claim 7, wherein said mammal is a human.
9. A method for the detection of a disease in a mammal, comprising the
25 steps of providing an NMR spectrum of metabolites in a body fluid of an individual of said mammal in which said disease is suspected and comparing said NMR spectrum with a difference profile from a database

according to claim 7 or 8, which difference profile has been determined for a corresponding body fluid from a corresponding mammal.

10. A method according to claim 9, wherein said mammal has been chosen from the group consisting of primates, dogs and rodents.

5 11. A method according to claim 9 or 10, wherein said body fluid is urine.

12. A method according to any one of claims 9-11, wherein said disease is osteoarthritis.

13. A method for manufacturing a difference profile for the detection of a disease in a mammal, comprising the steps of: a) providing a first
10 normalized set of positions and corresponding signal intensities of spectral lines of one or more NMR spectra recorded from metabolites in a body fluid of one or more healthy individuals of said mammal; b) providing a second normalized set of positions and corresponding signal intensities of spectral lines of one or more NMR spectra recorded from metabolites in a
15 corresponding body fluid of one or more individuals of said mammal in which said disease has been diagnosed; and c) detecting the spectral lines whose signal intensities differ between said first and second set, for obtaining said difference profile.

14. A method according to claim 13, wherein said detecting of the
20 spectral lines whose signal intensities differ between said first and second set comprises the use of the method according to WO 02/13228.

15. A method according to claim 13 or 14, wherein said disease is osteoarthritis.

16. A method for identifying a biomarker for a disease, comprising
25 manufacturing a difference profile according to any one of claims 1-6 and identifying one or more metabolites which are characterized by one or more defined spectral lines in said difference profile, which one or more metabolites, alone or in combination, characterize said biomarker.

17. A method according to claim 16, wherein said one or more metabolites are characterized by one or more defined spectral lines with a positive regression.
18. A method according to claim 16 or 17, wherein said disease is
5 osteoarthritis.
19. A biomarker for the detection of a disease in a mammal, comprising one or more metabolites or parts thereof which are characterized by one or more defined spectral lines in a difference profile according to any one of claims 1-6.
- 10 20. A biomarker for the detection of osteoarthritis, comprising one or more metabolites or parts thereof chosen from the group consisting of lactate, malate, β -alanine, hypoxanthine, 3,4-dihydroxy mandelate, 3-hydroxy cinnamic acid, alanine, asparagine and N-acetyl aspartate, and combinations thereof.
- 15 21. Use of a biomarker according to claim 19, for the detection of a disease in a mammal.
22. Use of a biomarker according to claim 20, for the detection of osteoarthritis in a mammal.
23. A method for detection of a disease in a mammal, comprising
20 measuring a biomarker according to claim 19 or 20 in a body fluid of an individual of said mammal.
24. A method according to claim 23, wherein said body fluid is urine.
25. An apparatus for use of a method according to claim 23 or 24, comprising a solid carrier with one or more immobilized binding partners
25 for said biomarker thereon.
26. An apparatus according to claim 25, further comprising a system for the quantitative detection of binding between said biomarker and said one ore more immobilized binding partners.